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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/662,145

09/15/2003

His Majesty King Bhumibol Adulyadej

Royal 001-2003.usa

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7590 03/04/2008  
The Office of His Majesty's Principal  
Private Secretary  
BANGKOK, 10200  
THAILAND

EXAMINER

HOGAN, JAMES SEAN

ART UNIT

PAPER NUMBER

3752

MAIL DATE

DELIVERY MODE

03/04/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/662,145 | <b>Applicant(s)</b><br>BHUMIBOL ADULYADEJ, HIS<br>MAJESTY KING |  |
|                              | <b>Examiner</b><br>James S. Hogan    | <b>Art Unit</b><br>3752  |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1, 11, 13, 14, 16-18 and 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 11, 13, 14, 16-18 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

Applicant's arguments filed October 9, 2007 have been fully considered but they are not persuasive. See below for explanation.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 13 is rejected under 35 U.S.C. 101 because the claimed method of “moving” clouds appears to be inoperative and therefore lacks utility.

There is no well-established utility of these claims. The claim of “moving” clouds asserts that clouds can be moved against any prevailing atmospheric conditions where winds caused by the heating and cooling of air, as well as the Earth rotation, can be overcome.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 11, and 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The use of dispensing urea and/or sodium

chloride from an aircraft exclusively upwind of a cloud shoulder and base is not taught in the Specification within the description of the "Sandwich" or "Super Sandwich" technique, and is therefore considered new matter. What is taught is simultaneous release of the chemicals on opposite sides of the cloud, with no indication where the wind is in relation to those proposed air paths or to the cloud itself.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 11, 17, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Montmory in view of U.S Patent No. 5,357,865 to Mather and further in view of U.S. Patent No. 3,613,992 to Knollenberg, and even further in view of U.S. Patent No. 6,056,203 to Fukata

Claims 1 and 11 claim a process of rainmaking comprising the steps of triggering, fattening, attacking and enhancing.

Montmory ('271) discloses a process of rainmaking (i.e., cloud seeding), via aircraft delivery, which teaches much of the claimed techniques as "triggering," "fattening" and "attacking". The triggering of Montmory is the use of a salt namely, sodium chloride, as in claim 1 and also calcium chloride for activation of a cloud

formation, and which also lend information for the use of “fattening” with dimethyl sulfoxide (DMSO). Furthermore, Montmory discloses part of the step of “attacking” (that is, the use of a device, as described in column 4, lines 32-59, and Col. 4, lines 51-60) where the salts are sprayed into and at the base of clouds from an aircraft (as per claim 17). Further, components of the teaching of “attacking” not taught by Montmory are taught by the combination of the procedures taught by Mather ('865) and Knollenberg ('992). Mather ('865) teaches the use of sodium chloride as a rain initiation agent used for cloud seeding (claim 1) upwind and above a cloud. Knollenberg teaches the use of urea in a method for producing rain or snow by applying urea to the area of a cloud where temperatures are known to be between 6°C and -15°C. As per claim 17, it can be argued that the application of any of the known agent in any form of physical state, liquid (as in Montmory), solids (as in Nelson et al), or gaseous (as in Mather), can be considered to be one known by one of ordinary skill. Further, it can be argued that at the base of any cloud is where these temperatures can be found, as the internal temperature of a cloud decreases with respect to higher elevation. Neither Montmory ('271) nor Mather ('865) and Knollenberg ('992) teach the process of “enhancing”. Fukata ('203) teaches to “enhance” the volume of rainfall by the use of silver iodide flairs seeded into the top of a cloud (at the part of the cloud where the temperature is between 0°C and -15°C) and further discloses that ice crystals formed are by the use of sliver iodide flares and will be affected by the effect of a cloud becoming more transparent and will change to liquid precipitation. By combining Montmory ('271), Fukata ('203), Mather ('865) and Kollenberg ('992), the Super Sandwich technique is

taught, and, as per claim 18, Montmory teaches the desire to prevent hail. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have simultaneously combined the known cloud seeding techniques, in any sequence of Montmory, Fukata Mather (865) and Knollenberg ('992) to insure the eruption of rain or to prevent hail.

Claim 13, 14, 16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,357,865 to Mather in view of U.S. Patent No. 4,362,271 to Montmory and further in view of U.S. Patent No. 3,659,785 to Nelson et al. and even further in view of U.S. Patent No. 6,613,992 to Knollenberg, and still even further in view of U.S. Patent No. 5,628,455 to Fukata and yet still even further in view of U.S. Patent No. 6,056,203 to Fukata.

The rejections of claims 1 and 11 above address the techniques referred to by the Applicant as "triggering", "fattening", "attacking" and "enhancing" and will not be replicated here. As per claim 13, the technique of relocating a cloud, referred to by the Applicant as "moving", is taught by Nelson et al. ('785). As per claim 14, the dispersion of fog (i.e. a low cloud) is taught by Nelson et al using flakes of hygroscopic chemicals (Col. 1, line 9-17). Calcium chloride is named as a known exothermic hygroscopic chemical used for this purpose (Col. 2, line 30-34). As vapor pressure reduces, the fog becomes buoyant, and therefore rises. A prevailing wind would then move the cloud. Regarding claim 16, in which the use of "fattening" and "attacking" are used, the rejections of claim 1 above address those techniques, and will not be replicated here. The resultant of those techniques, upwind of a target area will result in the movement of

the enhanced cloud. Therefore, it would be obvious to one skilled in the art at the time the invention was made to have applied the effect of fog dispersion on a cloud in order to raise its elevation and subsequently move it.

Regarding claim 20, the use of calcium chloride (exothermic-hygroscopic), urea (endothermic-hygroscopic) and sodium chloride (hygroscopic) in any combination is taught in the rejections above. Therefore it would have been obvious to one skilled in the art at the time the invention was made to have combined the various cloud seeding and rainmaking techniques, in any combination, in order to promote rainfall onto a land mass.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Hogan whose telephone number is (571) 272-4902. The examiner can normally be reached on Mon-Fri, 7:00a-4:00p EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin P Shaver can be reached on 571-272-4720. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/J. S. H./  
Examiner, Art Unit 3752

/Kevin P. Shaver/  
Supervisory Patent Examiner, Art Unit 3754